

Comparisons of Job Characteristics

Focus Occupation: [Microbiologists \(19-1022\)](#)

Associated Occupation: [Medical and Clinical Laboratory Technicians \(29-2012\)](#)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 67

Focus Occupation: Microbiologists (19-1022)

Associated Occupation: Medical and Clinical Laboratory Technicians (29-2012)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Chemistry	4.8	17.5	15.2	< Expanded education and/or training may be required
Customer and Personal Service	11.3	12.9	5.6	<< Extensive education and/or training may be required
Medicine and Dentistry	3.7	12.8	10.7	< Expanded education and/or training may be required
Biology	3.7	12.3	24.1	>> Current knowledge level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 70

Focus Occupation: Microbiologists (19-1022)

Associated Occupation: Medical and Clinical Laboratory Technicians (29-2012)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Science	4.5	10.8	17.0	>> Skill level is likely more than sufficient
Operation Monitoring	6.6	9.5	7.3	< A higher skill level may be required
Quality Control Analysis	5.9	8.9	8.1	0 Current skill level may be sufficient
Equipment Maintenance	3.5	7.4	1.0	<< Extensive development of skills in this area may be required
Troubleshooting	4.5	7.3	4.1	<< Extensive development of skills in this area may be required
Equipment Selection	3.3	6.4	2.8	<< Extensive development of skills in this area may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 90			
Focus Occupation: Microbiologists (19-1022)					
Associated Occupation: Medical and Clinical Laboratory Technicians (29-2012)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Finger Dexterity	7.6	11.0	11.5	0	Current ability level may be sufficient
Flexibility of Closure	7.8	9.8	13.6	>>	Current ability level is likely more than sufficient
Visual Color Discrimination	6.4	9.3	9.4	0	Current ability level may be sufficient
Perceptual Speed	7.4	9.1	10.5	>	Current ability level is likely sufficient
Number Facility	6.3	8.7	11.0	>	Current ability level is likely sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 89
Focus Occupation: Microbiologists (19-1022) Associated Occupation: Medical and Clinical Laboratory Technicians (29-2012)		
Work Activities	Exclusivity of Activity	
Adhere to safety procedures	12	
Analyze biological research, test, or analysis data	70	
Analyze scientific research data or investigative findings	27	
Collect scientific or technical data	30	
Communicate technical information	4	
Conduct analyses or tests of organic compounds	71	
Conduct laboratory research or experiments	57	
Conduct standardized qualitative laboratory analyses	62	
Conduct standardized quantitative laboratory analyses	62	
Cultivate micro-organisms for study, testing, or medical preparations	84	
Direct and coordinate activities of workers or staff	3	
Examine biological or other material specimens under microscope	73	
Follow infectious materials procedures	52	
Follow microbiology procedures	74	
Follow safe waste disposal procedures	50	
Isolate and identify micro-organisms	82	
Maintain records, reports, or files	5	
Perform statistical analysis	71	
Prepare biological specimens for examination	84	

Prepare reports	8
Prepare sample for laboratory testing, analysis, or microscopy	74
Prepare vaccines, biologicals, or serums	85
Record test results, test procedures, or inspection data	48
Use biological testing instruments	73
Use chemical testing or analysis procedures	54
Use computers to enter, access or retrieve data	3
Use hazardous materials information	35
Use health or sanitation standards	62
Use laboratory equipment	60
Use mathematical or statistical methods to identify or analyze problems	30
Use microscope	71
Use quantitative research methods	35
Use relational database software	26
Use scientific research methodology	21
Use spreadsheet software	18
Use word processing or desktop publishing software	17

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus
Occupation to Associated
Occupation: 77

Focus Occupation: Microbiologists (19-1022)

Associated Occupation: Medical and Clinical Laboratory Technicians (29-2012)

Tools and Technologies	Exclusivity
Autoclave and sterilizer equipment and accessories	12
Chromatographic measuring instruments and accessories	16
Clinical and diagnostic analyzers and accessories and supplies	18
Computer printers	2
Computers	1
Content authoring and editing software	1
Data management and query software	1
Electrochemical measuring instruments and accessories	9
Fermentation equipment	31
Histology equipment	35
Indicating and recording instruments	2
Industry specific software	1
Information exchange software	1
Laboratory centrifuges and accessories	13
Laboratory decanting and distilling and evaporating and extracting equipment and supplies	19
Laboratory enclosures and accessories	17
Laboratory heating and drying equipment	13
Laboratory incubating equipment	20
Laboratory microscope slides and supplies	20

Laboratory mixing and stirring and shaking equipment and supplies	19
Laboratory pumps and tubing	23
Laboratory washing and cleaning equipment	35
Light and wave generating and measuring equipment	4
Microorganism propagation and transformation media and kits and equipment	47
Pipettes and liquid handling equipment and supplies	16
Specimen collection and transport containers and supplies	14
Spectroscopic equipment	10
Test Tubes	26
Tissue culture and high throughput screening supplies	31
Viewing and observing instruments and accessories	4
Weight measuring instruments	7

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.